

EXHIBIT B

Currently Pending Claims

1. A process for purifying a monoolefin stream, comprising:

contacting a monoolefin stream comprising one or more monoolefins with a Diels-Alder dienophile to convert one or more conjugated olefins present in the monoolefin stream to a Diels-Alder adduct;

and removing the Diels-Alder adduct from the monoolefin stream, thereby purifying the monoolefin stream such that it comprises less than about 50 parts per million (ppm) conjugated olefins.
3. A process according to claim 2 wherein said Diels-Alder dieneophile is selected from the group consisting of maleic anhydride, derivatives of maleic anhydride, benzoquinone, derivatives of benzoquinone, dialkyl fumarates, dialkyl maleates, dialkylacetylenedicarboxylates, and combinations thereof.
4. A process according to claim 3 wherein said Diels-Alder dieneophile is maleic anhydride.
5. A process according to claim 1 wherein said conjugated olefins comprise at least about 4 carbon atoms per molecule and no more than about 10 carbon atoms per molecule.
6. A process according to claim 5 wherein said conjugated olefins comprise at least about 4 carbon atoms per molecule and no more than about 8 carbon atoms per molecule.

7. A process according to claim 1 wherein said conjugated olefins are selected from the group consisting of 1,3-butadiene, 1,3-pentadiene, 1,3-hexadiene, 2,4-hexadiene, 1,3,5-hexatriene, 1,3-heptadiene, 2,4-heptadiene, 1,3,5-heptatriene, 1,3-octadiene, 2,4-octadiene, 3,5-octadiene, 1,3,5-octatriene, 2,4,6-octatriene, 1,3,5,7-octatetriene, 1,3-nonadiene, 2,4-nonadiene, 3,5-nonadiene, 1,3,5-nonatriene, 2,4,6-nonatriene, 1,3,5,7,nonatetraene, 1,3-decadiene, 2,4-decadiene, 3,5-decadiene, 4,6-decadiene, 1,3,5-decatriene, 2,4,6-decatriene, 3,5,7-decatriene, 1,3,5,7-decatetraene, 2,4,6,8-decatetraene, 1,3,5,7,9-decapentaene, and combinations thereof.
8. A process according to claim 7 wherein said conjugated olefins are selected from the group consisting of 1,3-butadiene, 1,3-pentadiene, 1,3-hexadiene, 1,3-heptadiene, 1,3-octadiene, 1,3-nonadiene and 1,3-decadiene.
9. A process according to claim 1 wherein said monoolefins comprise normal alpha olefins.
10. A process according to claim 1 wherein said monoolefins are selected from the group consisting of 1-butene, 1-pentane, 1-hexene, 1-heptene, 1-octene, 1-nonene, 1-decene, and combinations thereof.
11. A process according to claim 10 wherein said monoolefins are selected from the group consisting of 1-butene, 1-pentene, 1-hexene, and combinations thereof.
12. A process according to claim 1 wherein said purified monoolefin stream comprises less than about 25 parts per million conjugated olefins.
13. A process according to claim 1 wherein said purified monoolefin stream comprises less than about 10 parts per million conjugated olefins.

15. A process according to claim 1 wherein said removing is selected from the group consisting of distillation, adsorption, membrane separation, and combinations thereof.
16. A process according to claim 1 wherein said removing is conducted using reactive distillation.
17. A process according to claim 1 wherein said monoolefins are 1-butene and said conjugated olefins are 1,3-butadiene.
18. A process according to claim 17 wherein said dienophile is maleic anhydride.
19. The process according to claim 1 wherein said Diels-Alder dienophile is generally represented by the formula:

$$R^1R^2C = CR^3R^4$$
where
 $R^1 = H, C(=O)OR^5, C(=O)R^6, C(=O)NR^7R^8, CN, C_1 \text{ to } C_{30} \text{ alkyl, and aromatic,}$
 $R^2 = H, C(=O)OR^5, C(=O)R^6, C(=O)NR^7R^8, CN, C_1 \text{ to } C_{30} \text{ alkyl, and aromatic,}$
 $R^3 = H, C(=O)OR^5, C(=O)R^6, C(=O)NR^7R^8, CN, C_1 \text{ to } C_{30} \text{ alkyl, and aromatic,}$
 $R^4 = H, C(=O)OR^5, C(=O)R^6, C(=O)NR^7R^8, CN, C_1 \text{ to } C_{30} \text{ alkyl, and aromatic,}$
 $R^5 = C_1 \text{ to } C_{10} \text{ alkyl, aromatic, and } (H)C=CH_2,$
 $R^6 = C_1 \text{ to } C_{10} \text{ alkyl, aromatic, and } (H)C=CH_2,$
 $R^7 = C_1 \text{ to } C_{10} \text{ alkyl, aromatic, and}$
 $R^8 = C_1 \text{ to } C_{10} \text{ alkyl, and aromatic.}$
20. The process according to claim 1 wherein said Diels-Alder dienophile is generally represented by the formula:

$$R^1C \equiv CR^2$$
where
 $R^1 = H, C(=O)OR^3, C(=O)R^4, C(=O)NR^5R^6, CN, C_1 \text{ to } C_{10} \text{ alkyl, and aromatic,}$

$R^2 = \text{H}, \text{C}(=\text{O})\text{OR}^3, \text{C}(=\text{O})\text{R}^4, \text{C}(=\text{O})\text{NR}^5\text{R}^6, \text{CN}, \text{C}_1 \text{ to } \text{C}_{10} \text{ alkyl}, \text{ and aromatic}$

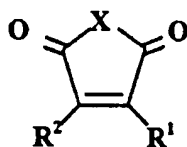
$R^3 = \text{C}_1 \text{ to } \text{C}_{10} \text{ alkyl}, \text{ and aromatic},$

$R^4 = \text{H}, \text{C}_1 \text{ to } \text{C}_{10} \text{ alkyl}, \text{ and aromatic},$

$R^5 = \text{C}_1 \text{ to } \text{C}_{10} \text{ alkyl}, \text{ and aromatic}, \text{ and}$

$R^6 = \text{C}_1 \text{ to } \text{C}_{10} \text{ alkyl}, \text{ and aromatic}.$

21. The process according to claim 1 wherein said Diels-Alder dienophile is generally represented by the formula:

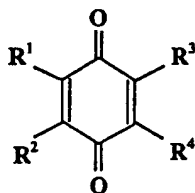


where $X = \text{O}, \text{N}, \text{ and } \text{S},$

$R^1 = \text{H}, \text{C}_1 \text{ to } \text{C}_{10} \text{ alkyl}, \text{ and aromatic}, \text{ and}$

$R^2 = \text{H}, \text{C}_1 \text{ to } \text{C}_{10} \text{ alkyl}, \text{ and aromatic}.$

22. The process according to claim 1 wherein said Diels-Alder dienophile is generally represented by the formula:



where

$R^1 = \text{H}, \text{C}_1 \text{ to } \text{C}_{10} \text{ alkyl}, \text{ aromatic}, \text{ and } (\text{H})\text{C}=\text{CH}_2,$

$R^2 = \text{H}, \text{C}_1 \text{ to } \text{C}_{10} \text{ alkyl}, \text{ aromatic}, \text{ and } (\text{H})\text{C}=\text{CH}_2,$

$R^3 = \text{H, C}_1 \text{ to C}_{10} \text{ alkyl, aromatic, and (H)C=CH}_2, \text{ and}$

$R^4 = \text{H, C}_1 \text{ to C}_{10} \text{ alkyl, aromatic, and (H)C=CH}_2.$